

42a and 42b on the other end. These pads cooperate with the top lid 14, see FIG. 8, to maintain the top lid spaced from the lower housing such that there is a clearance between the under side of the top lid and the upper side of the lower housing. To maintain the top lid in place on the lower housing are a set of magnets 44 on the lower housing and a set of metal plugs 46 on the underside of the top lid, see FIG. 8. The magnets and plugs are received in pockets in the respective lid and housing in which they are received. Arranged in this way, the top lid cannot move laterally or horizontally with respect to the lower housing and the magnets tend to releasably secure the two parts against relative vertical movement.

With the top lid and lower housing disposed in the manner thus far described, there are a plurality of clearance spaces 50 and 55 at the ends and 60 and 65 along the sides. The clearance spaces extend completely around the trap and those along the sides are basically the same in open dimensions while the clearance spaced at the ends are also the same in open dimensions but different in size from the side wall clearance spaces. As seen in FIG. 3, the clearance space 50 is narrower along the edges 50a and 50b than along the center section 50c. This difference in clearance space at the ends is due to the fact that the top lid in the end sections 70 and 75 thereof includes an arcuate center section 70a and 75a. The ends are basically the same and appear as shown in FIG. 3. The reason for the larger clearance at the ends is to permit entrance by the larger species of roach such as the American and oriental roaches.

By contrast, the side clearances 60 and 65 are basically uniform along the length since the side walls of the top lid are disposed in planar parallel relation with the opposed side walls of the lower housing, as seen in FIGS. 4 and 5. In effect these side clearances are of much smaller dimensions and are proportioned to appear as crevices to attract the smaller roach species such as the German and brown-banded roaches.

As seen from FIGS. 5-7, as a roach enters any clearance, attracted there by an attractant, it is necessary for the roach to traverse at least a portion of the trap plate 15 in order for the roach to reach the attractant well 37. The well may contain any one or a combination of attractants such as baits, of which there are a large number known, or pheromone of which there are several known, or a combination of both. The exposed surfaces of the trap plate are coated with a powder, electrostatically bound to the surface of the plate, even the curved surfaces thereof. Typically, insulating plastics tend to develop an electrostatic charge when rubbed by cloth and the like. The electrostatic charged surface will attract and hold an electrostatically chargeable powder. Examples of the powders which can be used are fine particles of talc (magnesium silicate) or fine particles of carnauba wax since these carry an electrostatic charge opposite to that of the roach or other insect.

As a roach enters the trap, attracted by the odor of the bait or pheromone or both, it traverses a coated surface which it must traverse to reach the bait well 37. The powder is then transferred to the roach and neutralizes the charge on the roach's cuticle-feet and the roach is destabilized and falls into the insect basin where it is trapped by the sticky material. Even if not caught by the sticky material, the roach will have difficulty since it must traverse an essentially vertical smooth wall which forms the inside surface of the well, see for example FIG. 5.

Referring now to FIGS. 9-11, one can obtain a better understanding of the reason for the effectiveness of the

insect trap 10 of this invention. The trap plate 15 is uniquely configured in that all surfaces save the peripheral surfaces 31a, 32a, 33a and 34a which are in contact with the adjacent shoulder wall of the lower housing are curved. Accordingly, regardless of which direction a roach enters the trap, it must traverse a surface of the trap plate and thus accumulates sufficient charged powder on the surface of the trap plate to neutralize the electrostatic charge on the insect's feet-cuticle. As the insect attempts to reach the attractant in well 37, it must traverse some surface of the trap plate. While the shortest distance to the attractant well is from the center of either end wall adjacent sections 31 or 32, a portion of section of each of those sections as well as a portion of the center section 35 must be traversed. That travel is sufficient to cause transfer of the powder to the insect's feet-cuticle and to destabilize the roach. Unable to gain a secure footing on the curved or inclined surfaces of any of the sections 31, 32, 33, 34 or 35, the roach then falls into the insect basin and is trapped there as already described.

As will be apparent, periodic care should be taken of the trap 10. Basically this involves removal of the sticky pad 19 and replacement of the same and replacement of the trap plate 15 with a new plate properly activated. One convenient manner by which to achieve this is to package a new pad 19, attractant capsule for placement in the well and a new trap plate and activating powder in a package which contains all of the replaceable items and provides a way to safely dispose of the spent items. The new pad may include a removable and releasable protective cover to protect the sticky surface of the pad.

Thus, the sealed package is opened and the items are removed. The new trap plate is electrostatically charged by rubbing all surfaces with a dry cloth. The plate is placed in the package along with the activated powder and the package is shaken to cause the powder to deposit on all charged portions of the plate. The newly charged plate is removed from the package and placed aside care being taken not to discharge the plate. The old plate is removed from the trap and placed in the package. The old pad, with roaches stuck thereto is removed, folded in half and placed in the package and the latter is sealed by tape or the like. The protective cover of the new pad is removed and it is placed in the insect basin at the base thereof. The newly activated trap plate is placed on the shoulder, a new attractant capsule placed in the well and the top lid replaced. The trap is then placed in the desired location. The spent items are sealed in a container and may be disposed of in a safe and environmentally correct manner.

It is contemplated that numerous changes, modifications and/or additions may be made to the specific embodiment of the invention shown in the drawings and described above without departing from the spirit and scope of the present invention. Accordingly, it is intended that the scope of the present invention be limited only by the scope of the appended claims.

What is claimed is:

1. An improved insect and pest trap for roaches of various sizes and the like comprising:

an elongated lower housing member having side walls and end walls which are inclined in opposite directions and an open base section between the walls, shoulder means provided in said lower housing member located above said open base section, top lid means having side walls and end walls adapted to be received over said lower housing member, said top lid being proportioned with respect to said side and end walls of the lower housing to provide an access